

Bibliography

Data and Technology



This annotated bibliography contains articles and reports that discuss important data system and technological issues involved in designing and implementing an alternative compensation program.

This bibliography presents findings from a thorough scan of the literature. CECR does not necessarily promote the ideas shared in the publications but seeks to present the reader with a comprehensive list of recent relevant publications on various subtopics of compensation reform.

Each citation includes the following information:

- The title, author, source, and date of publication
- The publication type—CECR has typed each publication according to one or more of the following eight publication types.
 - **Scientific research:** Peer-reviewed reports on quantitative or qualitative research
 - **Rigorous research:** Peer-reviewed reports on research of a more general nature
 - **Case study:** Systematic reviews of one or more individual compensation reform initiatives
 - **Policy paper:** Reports on public policies affecting educator compensation reform
 - **Issue paper:** Brief overviews of specific educator compensation reform topics of interest that might prove useful to those implementing such programs
 - **Information guide:** Practical suggestions for implementing educator compensation reform programs
 - **Literature review:** Systematic evaluations of educator compensation reform research or reflections on the current state of the art
 - **Perspective piece:** First-person reflections offering perspective or personal experience with educator compensation reform programs
- A link to the publication if it is electronically available
- An abstract of the publication

Balanced Scorecards and Management Data

Author(s): Hess, F., & Fullerton, J. Date: 2009

Source: Cambridge, MA: Center for Education Policy Research

Type: Policy paper

Full text: URL not available

Abstract: This policy paper suggests that states and districts approach data collection in a more systematic and innovative way. In addition to using student achievement data to drive instruction and management, data should be collected on other aspects of school life that also influence student achievement. Data that provide a more complete snapshot of what occurs at the school level also will influence student achievement and drive changes at the school level. Data that should be collected include tracking the cost of recruiting new teachers, tracking school supply deliveries to prevent waste, and tracking how readily teachers can access student achievement data. According to the paper, "A school system which has these kinds of data is one where management is equipped to revolutionize how schools work, how teachers are supported and how dollars are spent" (p. 2).

Beyond the Bubble: Technology and the Future of Student Assessment

Author(s): Tucker, B. Date: 2009

Source: Washington, DC: Education Sector

Type: Policy paper

Full text: http://www.educationsector.org/usr_doc/Beyond_the_Bubble.pdf

Abstract: This policy paper addresses the advancements that are necessary in student tests in order to keep up with the ever-increasing technological advances that are occurring outside of education. These new student assessments will be able to offer individualized tests that show students thought processes and order of operations, information that will allow teachers to offer better education. The paper continues by providing examples of various innovative technology-based assessments.

Building Systems to Recognize Teachers of Excellence: Lessons From the Ohio Teacher Incentive Fund

Author(s): Raue, K., MacAllum, K., & Ristow, L. Date: 2008

Source: Ohio Teacher Incentive Fund

Type: Literature review; issue paper

Full text: <http://education.ohio.gov/GD/DocumentManagement/DocumentDownload.aspx?DocumentID=62741>

Abstract: This issue paper discusses lessons learned through the implementation of the Ohio Teacher Incentive Fund (TIF) grant. The TIF grant is currently being implemented in four districts: Cincinnati, Cleveland, Columbus, and Toledo. Each district has a distinct program that is designed to fit its needs. As a result, obstacles in the implementation of the grant have arisen in each site. This issue paper discusses five of the most common issues the Ohio TIF has overcome and shares lessons learned with readers. The issue areas include communication, program adaptation and operation, incentives and motivation, measures and data systems, and sustainability. The issue paper also includes a deeper look at each of the districts and the steps they have taken to address the obstacles they have encountered. All of the areas discussed are important for the successful implementation of a performance-based compensation program.

Cutting-Edge Strategies From Other Sectors

Author(s): Hassel, B. C. Date: 2008

Source: In M. Kanstoroom & E. C. Osberg (Eds.), *A Byte at the Apple* (pp. 219–244). Washington, DC: Thomas B. Fordham Institute

Type: Policy paper

Full text: http://www.edexcellence.net/doc/20081117_ByteAtTheApple.pdf

Abstract: This chapter presented by the cofounder of Public Impact offers a series of lessons to public education officials on the topic of data systems and collection. Many of the insights provided are borrowed and adapted from the private sector. Hassel cites business strategies currently implemented at such companies as Wal-Mart, Harrah's, Amazon, and Google. Using a method known as “data-mining,” Hassel explains, schools could use personnel information about teachers and students to make hypotheses about the behaviors of others. A tool such as Wireless Generation, for instance, would help school officials to tap into daily experience information through handheld devices in classrooms. Other ideas explored in this article include the “wisdom of crowds” theory and using prediction markets to influence teacher contracts.

Data Analysis in Administrators’ Hands: An Oxymoron?

Author(s): Creighton, T. B. Date: 2001

Source: *The School Administrator*, 58(4), 6–11

Type: Issue paper

Full text: URL not available

Abstract: This article focuses on data analysis and how it can be used in the world of education. School administrators may be able to use simple statistics to discover relationships between school factors and student achievement. Schools can use data, instead of supposition, and make decisions based on the needs of the district. This has implications for administration and instructional leadership.

Data-Driven Decision Making

Author(s): Mariani, G. Date: 2008

Source: SAS Institute

Type: Literature review; issue paper

Full text: http://www.sas.com/resources/whitepaper/wp_6792.pdf (free registration required)

Abstract: This issue paper serves as an informational guide for school and district administrators implementing data systems. The paper argues that although schools and districts collect enormous amounts of useful data, the data are often spread across various departments and in systems that are not easily integrated. As a result, important and useful data is not easily shared across departments, and decision making is ultimately affected. The paper suggests implementing a data system, SAS, as a data warehouse option for schools and districts. The paper also presents several case studies that outline the benefits of using the SAS data system.

Designing School Accountability: Towards a Framework and Process

Author(s): Gong, B., Blank, R. K., & Manise, J. G. Date: 2002

Source: Washington, DC: Council of Chief State School Officers

Type: Policy paper; information guide

Full text: http://www.ccsso.org/content/pdfs/designing_school_acct_syst.pdf

Abstract: This policy paper is one of many byproducts of the Accountability Systems and Reporting State Collaborative in Assessment and Student Standards, a collaborative project sponsored by the Council of Chief State School Officers. The authors provide a comprehensive information guide focused on the task of designing and implementing accountability systems that work effectively and efficiently. The document presents the concept and tenets of accountability systems in three different forms. First, the design process is explained as a linear sequence of steps, from brainstorming to evaluation. Next, the authors provide a series of questions against which school officials can judge their new accountability systems in the areas of alignment and effectiveness. Finally, the guide offers examples of systems currently being implemented in several different states. To conclude, the writers point readers toward several different resources providing policy recommendations and implementation tips.

Developing a Technology Infrastructure to Support a High-Stakes Teacher Performance Assessment Program

Author(s): Muenzen, P. M. Date: 2001

Source: Paper presented at the Annual Meeting of the American Educational Research Association, April 10–14, 2001, Seattle, WA

Type: State or regional reports

Full text: URL not available

Abstract: Connecticut is the first state to implement mandatory portfolio assessment as a component of its teacher certification program known as the Beginning Educator Support and Training (BEST) program. The program is a three-year induction process that includes both support (mentorship from an experienced teacher and attendance at professional development seminars) and assessment (subject-specific portfolio). The Connecticut Educator Database was developed to handle the information related to implementing the BEST program. This article describes the development of this database system and the strategies used to manage various kinds of information in the BEST program.

Developing Requirements for Data Warehouse Systems With Use Cases

Author(s): Bruckner, R. M., List, B., & Schiefer, J. Date: 2001

Source: In *Data Management and Decision Support: 2001—Seventh Americas Conference on Information Systems* (pp. 329–335)

Type: Information guide

Full text: http://www.ifs.tuwien.ac.at/~bruckner/pubs/amcis2001_requirements.pdf

Abstract: This paper examines data warehouse systems and how they can be used to enhance connections between all levels of an organizational structure. In the development of a data warehouse system, there are three levels of abstraction to be considered: business or organizational level, user level, and detailed system level. In data a system, there are requirements of the system specific to each level.

Effective Use of Electronic Data Systems: A Readiness Guide for School and District Leaders

Author(s): Learning Point Associates and the Educational Service Agency (ESA) Alliance of the Midwest Date: 2006

Source: Naperville, IL: Learning Point Associates

Type: Information guide; literature review

Full text: <http://www.learningpt.org/pdfs/datause/DataReadinessTool.pdf>

Abstract: This document is a resource for school and district leaders about data use. It includes three sections: tools for schools and district leaders, which are designed to support thinking about the subject; tools for facilitators, which are designed as a guide for needs assessment in districts; and resources about data use and data systems.

Eight Buying Tips: Data Warehouses

Author(s): McIntire, T. Date: 2004

Source: *Tech & Learning*

Type: Information guide

Full text: <http://www.techlearning.com/story/showArticle.php?articleID=26806926>

Abstract: This issue paper examines data systems and provides an eight-point checklist of questions to ask when determining which data system would work best for an organization. The article also includes information on the seven things a data system must include. The author concludes with a description of, and links to, various data warehousing systems that can be used.

The Enabling Role of Decision Support Systems in Organizational Learning

Author(s): Bhatt, G. D., & Zaveri, J. Date: 2002

Source: *Decision Support Systems*, 32(3), 297–309

Type: Information guide; literature review

Full text: URL not available

Abstract: This article examines strategies that are employed in Decision Support Systems (DSSs) and how DSSs can promote organizational learning. The article discusses DSSs in detail and how changes in these systems impact organizational learning. DSSs help facilitate organizational adaptations to changes in the world.

The Essentials of Information Quality Management

Author(s): English, L. Date: 2002

Source: *DM Review*, 12(9), 36–44

Type: Information guide

Full text: http://www.dmreview.com/article_sub.cfm?articleId=5690

Abstract: Data and information quality are important to understand, especially with the new focus on data-driven decision making in education. The management tool needs definition. This article provides 10 essentials for quality data management. This tool is useful for those implementing a quality data system or working on data reform.

Formative Feedback Systems and the New Instructional Leadership

Author(s): Halverson, R., Prichett, R., & Watson, J. Date: 2007

Source: Madison, WI: Wisconsin Center for Education Research

Type: Scientific research; case study

Full text: http://www.wcer.wisc.edu/publications/workingPapers/Working_Paper_No_2007_03.pdf

Abstract: This paper reports findings of a case study into the formative feedback systems present at one American public elementary school. The authors approach their study with the view that “a school’s formative feedback system structures opportunities for teachers and school leaders to (a) learn from organizational performance information and (b) adjust instructional programs and practices accordingly” (p. 5). The research was designed to determine how and when teachers and administrators were using data-sharing techniques and which systems of feedback (social and technical) were most successful for influencing and revising practice. Though the authors could not find hard data to support a positive correlation between formative feedback systems and student achievement, they were able, through qualitative research methods, to show that these systems work positively to ease teacher anxiety about assessments, communication, and curriculum.

From Qualifications to Results: Promoting Teacher Effectiveness Through Federal Policy

Author(s): Chait, R. Date: 2009

Source: Washington, DC: Center for American Progress

Type: Policy paper

Full text: <http://www.americanprogress.org/issues/2009/01/pdf/het.pdf>

Abstract: This paper provides specific recommendations for the federal government to increase teacher effectiveness. Because determining teacher effectiveness requires longitudinal and comprehensive data, one role the federal government could play would be to invest in a data infrastructure. In addition, the government could establish competitive state and district teacher effectiveness grants. To attract high-quality educators into the teaching profession who could be dissuaded by the copious amount of schooling needed to become a teacher, the government could provide funding for additional alternative compensation grants. The policy paper also recommends that the federal government pilot state grant programs and provide other incentives to states and districts to adopt programs that evaluate teacher effectiveness. The paper concludes with the political barriers that arise when using effectiveness data.

Integrating a Decision Support System Into a School: The Effects on Student Functioning

Author(s): Kalay, P., & Chen, D. Date: 2002

Source: *Journal of Research on Technology in Education*, 34(4), 435–453

Type: Scientific research

Full text: URL not available

Abstract: In this case study based in Israel, the impact of the implementation of Decision Support Systems (DSSs) on student achievement is investigated. Using test data collected from 10th-grade students, the statistical analysis revealed that student achievement increased with the integration of a DSS. The improvement especially evident in specific subjects, including mathematics and English.

Knowledge Management for Educational Information Systems: What Is the State of the Field?

Author(s): Thorn, C. A. Date: 2001

Source: *Education Policy Analysis*, 9(47)

Type: Case study; information guide

Full text: <http://epaa.asu.edu/epaal/v9n47/>

Abstract: This article provides information on implementation strategies for utilizing Knowledge Management in systemic education reform. Knowledge management is an adaptation of information management and is best understood as a system in which knowledge is “seen as information that comes laden with experience, judgment, intuition, and values” (p. 4). The article presents four objectives of knowledge management: create knowledge repositories, improve knowledge access through use of technology and field experts, encourage knowledge-growing, and manage knowledge as an asset. To illustrate the use of knowledge management in education, the author presents the case study of Minneapolis Public Schools (MPS). MPS applied its knowledge management skills to the creation of the School Management System, a data system that allowed data access to be decentralized such that individual teachers could become “sophisticated consumers of student and system process data” (p. 21). Though the author cites several limitations to the implementation of the School Management System, he explains that a reform such as this will help promote the concept of knowledge management in education.

Knowledge Management Systems and Solutions for the School Principal as Chief Learning Officer

Author(s): Becerra-Fernandez, I., & Stevenson, J. M. Date: 2001

Source: *Education*, 121(3), 508–518

Type: Literature review

Full text: URL not available

Abstract: This article provides an overview of knowledge management systems. These systems promote organizational learning within a framework that makes knowledge accessible. This model entrusts the principal with the responsibility of overseeing the system, acting as the chief learning officer of the school. The principal must create an environment where organization learning is constant. This article takes from examples of knowledge management systems in both the public and private sector and how these systems can be used to improve school performance.

Leadership for Data-Based Decision Making: Collaborative Educator Teams

Author(s): Wayman, J., Midgley, S., & Stringfield, S. Date: n.d.

Source: In A. Danzig, K. Borman, B. Jones, & B. Wright (Eds.), *New Models of Professional Development for Learner Centered Leadership*

Type: Scientific research

Full text: <http://edadmin.edb.utexas.edu/datause/papers/Wayman,%20Midgley%20&%20Stringfield.PDF>

Abstract: In this chapter, the authors examine the contrast between the increase in data-driven decision making at the school level and the inability for most educators to fully interpret and understand the data due to a lack of proper training. In order to combat the void of appropriate training, the authors use the experiences of four districts that partnered with the Stupski Foundation under the District Alliance Project to establish collaborative educator teams. The purpose of the teams is to provide a support structure for interpreting complex district data and ultimately adjusting and adapting the teaching methods and lessons used by the district to maximize student achievement. This chapter offers insight on how to construct successful educator collaboration teams, ways to establish data systems that produce buy-in from the teams, the importance of strong leadership, and the establishment of common vocabulary regarding the complex issue of data.

Lessons Learned About Implementing Performance-Based Pay

Author(s): U. S. Department of Education Date: n.d.

Source: Washington, DC: U.S. Department of Education

Type: Literature review; information guide

Full text: <http://www.ed.gov/admins/tchrqual/performance/pay-performance.pdf>

Abstract: This information guide disseminated by the U.S. Department of Education gives a brief rationale for the use of alternative compensation systems in public school classrooms, then highlights some key components of effective performance-pay models. These tenets include linking data systems with human resources, payroll, student performance, and teacher evaluations; implementing multiple valid assessments of teachers; offering incentives large enough to change behavior; and continually refining the system based on stakeholder input. Finally, the guide lays out specific differences between alternative compensation systems and traditional pay models. According to this piece, “by continuing to evaluate the effect of these innovative programs and harnessing emerging insights ... we can ensure that these promising developments will benefit greater numbers of schools, teachers, and students across the nation” (p. 4).

Longitudinal Data Systems to Support Data-Informed Decision Making: A Tri-State Partnership Between Michigan, Minnesota, and Wisconsin

Author(s): Thorn, C. A., & Meyer, R. H. Date: 2006

Source: Madison, WI: Wisconsin Center for Education Research

Type: Literature review

Full text: http://www.wcer.wisc.edu/publications/workingPapers/Working_Paper_No_2006_1.pdf

Abstract: This working paper provides information about a current partnership between the states of Michigan, Minnesota, and Wisconsin, venturing to create a shared longitudinal-data system in their schools. At this time, the Tri-State Partnership includes data on all students enrolled in PK-12 education in each of the three states; soon, state officials hope to expand the system to include all higher education students as well. The states plan to launch the implementation phase of this project incrementally, which they believe will help to “launch end-use applications and build local support for the overall project more quickly and effectively” (p. 5).

Making Sense of the Data: Overview of the K–12 Data Management and Analysis Market

Author(s): Stein, M. Date: 2003

Source: Boston: Eduventures

Type: Literature review

Full text: http://3d2know.cosn.org/making_sense_of_the_data.pdf

Abstract: With the authorization of the No Child Left Behind (NCLB) Act, states are required to collect and report on data in a variety of categories. This recent emphasis on data has forced many districts to implement data collection systems to organize the reporting of data. This report provides a framework for data management and analysis (DMA) systems that capture the various data components expressed under NCLB. This report also offers an in-depth analysis of the various DMA systems, including common vocabulary for the data systems, how to maximize their utility, challenges for the various systems, and how to determine which system best suits each district's needs. Lastly, the report offers important notes for veteran vendors wishing to better market their systems or new vendors trying to enter the DMA selling market.

Measurement Error or Meaningful Change?

The Consistency of School Achievement in Two School-Based Performance Award Programs

Author(s): Milanowski, A. T. Date: 1999

Source: *Journal of Personnel Evaluation in Education*, 12(4), 343–363

Type: Rigorous research

Full text: <http://www.springerlink.com/content/jm738357491p0520/>

Abstract: This paper looks at data from Kentucky and the Charlotte-Mecklenburg, NC school district school-based performance award programs. Due to the possibility for measurement error, the researchers look at data points over time in order to determine whether improvements in student achievement were based on meaningful change, or statistical error. The research concludes with a discussion of potential reasons for the inconsistencies observed in school classifications.

Methodological Concerns About the Education Value-Added Assessment System

Author(s): Amrein-Beardsley, A. Date: 2008

Source: *Educational Researcher*, 37(2), 65–75

Type: Issue paper; literature review

Full text: URL not available

Abstract: Audrey Amrein-Beardsley uses this issue paper to explore the benefits of using value-added assessment in public education and, more specifically, to present a case study of the Education Value-Added Assessment System (EVAAS). She lays out specific tenets of the EVAAS system and explains why EVAAS is so much more widely received than other value-added systems. In particular, the author notes that the EVAAS system is unimpaired by student-level characteristics that can often muddy findings in other systems. Furthermore, EVAAS lends itself to large-scale use because “the software for processing EVAAS data permits [wide] analysis” (p. 66). In conclusion, the author discusses the American Educational Research Association’s recommendations for high-stakes testing, some of which, such as “high-stakes decisions should not be made on the basis of a single-test score” and “the intended and unintended effects of the testing program must be continually evaluated and disclosed,” pertain specifically to the EVAAS value-added model.

The New Instructional Leadership: Creating Data-Driven Instructional Systems in Schools

Author(s): Halverson, R., Prichett, R., Grigg, J., & Thomas, C. Date: 2005

Source: Madison, WI: Wisconsin Center for Education Research

Type: Information guide

Full text: http://www.wcer.wisc.edu/publications/workingPapers/Working_Paper_No_2005_9.pdf

Abstract: This paper presents the data-driven instructional system (DDIS). The DDIS is a framework that is designed to capture school leaders and their innovation to promote student learning. The DDIS computes student achievement data on standardized tests into data that informs teacher instruction. The paper presents the six main functions of DDIS as well as an example of the DDIS in action.

The Next Step Using Longitudinal Data Systems to Improve Student Success

Author(s): Data Quality Campaign Date: 2009

Source: Austin, TX: Data Quality Campaign

Type: Policy paper

Full text: <http://www.dataqualitycampaign.org/files/NextStep.pdf>

Abstract: The Data Quality Campaign introduced its report on the status of state data systems across the United States. This policy paper and information guide outlines the many steps that states have taken to enhance their data systems and utilize the intelligence gleaned from the data systems to inform decisions. The report outlines ten essential items for state longitudinal data systems and presents the progress of each state in attaining these items. In addition, the report provides insight into successful state data systems that address each of the ten essential items listed in the report that can then be used as models for other states still developing their systems.

The Optimal Reference Guide:

What's Behind Your Data Warehouse? Data Warehouse Series—Part II

Author(s): King, S., & Jackl, A. Date: 2006

Source: Austin, TX: ESP Solutions Group

Type: Information guide

Full text: http://www.espsolutionsgroup.com/espweb/assets/files/ESP_DW_PartII_ORG.pdf

Abstract: This is the second report by ESP Solutions Group (ESP) on the topic of longitudinal data systems for schools and districts. The report describes the process of designing a longitudinal data system, focusing specifically on the reporting data store and the data warehouse. ESP considers different approaches to structuring a data system, and the benefits and drawbacks of each. The paper provides implementation tips as well as examples of how to design a longitudinal data system for tracking student attendance and student assessment results.

Organizational Learning and the Case for Knowledge-Based Systems

Author(s): Petrides, L. A. Date: 2002

Source: *New Directions for Institutional Research*, 113, 69–84

Type: Policy paper; information guide

Full text: URL not available

Abstract: This policy paper, one chapter of the book *New Directions for Institutional Research*, provides a historical perspective on the creation and implementation of knowledge-based systems within an organizational context. Here, “knowledge-based systems” are defined as “an ongoing course of action that examines the work processes and technical systems as well as changes in social and behavioral aspects of work, such as culture, group dynamics, and collaboration” (p. 72). The idea behind such systems is to have easily-understood and readily accessible procedures to disseminate information to faculty, staff, students, and the wider interest community. After articulating the reasoning behind knowledge-based systems, the author provides a set of guidelines for incorporating what she sees as the four key elements to the design process: identifying information strategies, maintaining an ongoing awareness of the organizational context, examining the information politics within the organization, and assessing the external environment and its influence on information needs.

The Performance Assessment System: A Portfolio Assessment Model for Evaluating Beginning Teachers

Author(s): Oakley, K. Date: 1998

Source: *Journal of Personnel Evaluation in Education*, 11(4), 323–341

Type: Policy paper; literature review

Full text: URL not available

Abstract: This article reports the development and implementation of the Performance Assessment System (PAS), a portfolio assessment mechanism for evaluating beginning teacher performance through a collection of evidence of teachers' effectiveness in increasing student learning (associated with Teach For America). The PAS approaches teacher performance from two distinct perspectives: the extent to which students have attained the goals established by the teacher and the degree to which teachers' demonstrated practice meets articulated performance standards. Teachers develop portfolios consisting of nine components, including: a compilation of student goals, a report of teaching philosophy and practice, an assessment of students' progress, lesson plans, videotaped classroom instruction, a principal evaluation, a peer evaluation, parent evaluations, and student evaluations. Each portfolio is rated independently by two assessors. Assessors determine an overall performance rating using a four-point rating scale ranging from 1 (ineffective) to 4 (exemplary). The author also discusses several issues that have recurred throughout the ongoing design-revision process of the PAS, including technical evaluation, anchoring the levels of performance across implementations and through time, and stability across teacher populations. The PAS continues to be piloted as an assessment tool that eventually will help districts retain only effective teachers and will empower states to license only teachers whose performance meets approved standards.

Policy Effectiveness of Interim Assessments in Providence Public Schools

Author(s): Clune, W. H., & White, P. A. Date: 2008

Source: Madison, WI: Wisconsin Center for Education Research

Type: Scientific research, policy paper

Full text: http://www.wcer.wisc.edu/publications/workingPapers/Working_Paper_No_2008_10.pdf

Abstract: This policy paper presents the findings from a study on interim assessments used in the Providence Public School District in Rhode Island. To produce the study, the authors conducted interviews with district officials, teachers, and other school personnel to analyze their experiences with interim assessments and the use of the assessment findings. The study concluded that there was some evidence of the interim assessments being effective; however, there were also limitations to the study. The study concluded, "Uncertainty about the magnitude of positive impacts raised questions about the net value of the assessments given their considerable costs to the districts, teachers and students" (p. 3).

Revamping a Teacher Evaluation System

Author(s): Sawyer, L. Date: 2001

Source: *Educational Leadership*, 58(5), 44–47

Type: Rigorous research; scientific research

Full text: URL not available

Abstract: This article describes a change process of teacher-evaluation methods used in the Washoe County School District in Reno, Nevada. Drawing on the understanding of the need for changes, a new system has been developed. This new evaluation system assesses four domains of teaching: planning and preparation, classroom environment, instruction, and professional responsibilities. Each domain identifies components and specific elements of teacher behaviors. Each element uses a rubric rating of teacher behavior from unsatisfactory to target for growth to proficient to area of strength. A two-year field test was conducted. All principals and assistant principals were invited to test the system with volunteer teachers. At the end of each of two school years, surveys and focus groups were used to collect feedback data separately from administrators, novice teachers, and postprobationary teachers. The majority of experienced teachers were satisfied with the new system. They appreciated the increased control they felt in determining the outcome of their performance ratings and expressed renewed motivation toward personal improvement. Novice teachers felt secure in knowing what the indicators of success were. Dissatisfaction was noted with certain aspects of new system implementation, but not of the system itself.

Software Enabling School Improvement Through Analysis of Student Data

Author(s): Wayman, J. C., Stringfield, S., & Yakimowski, M. Date: 2004

Source: Baltimore: Center for Research on the Education of Students Placed at Risk

Type: Information guide

Full text: http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/be/4d.pdf

Abstract: This paper examines the use of data in school improvement. The authors research student data and data-based decision making by reviewing software and technology that is currently available to study such data. In addition, it includes information about the usefulness of each piece of technology reviewed. The authors conclude with a commitment to continuing the review of new technology as it becomes available.

Student Data Systems for School Improvement: The State of the Field

Author(s): Wayman, J. C. Date: 2007

Source: In *Educational Technology Research Symposium: Vol. 1* (pp. 156–162). Lancaster, PA: ProActive

Type: Information guide

Full text: <http://edadmin.edb.utexas.edu/datause/papers/Wayman%20state%20of%20data%20systems%20field.pdf>

Abstract: In this report, the author offers a review of three different types of student data systems, a high-level review of the research on the data systems, and future implications for their use. The data systems reviewed in this report are student information systems (SIS), assessment systems, and data warehouse systems. The author explores the advantages and disadvantages of all three as well as the scenarios in which each system is maximized. This report also suggests important questions for districts to ask when choosing a data system that best fits their needs while acknowledging that one system rarely meets all of the needs of a district.

Student Information Systems Demystified

Author(s): McIntire, T. Date: 2004

Source: *Tech & Learning*

Type: Information guide

Full text: <http://www.techlearning.com/showArticle.php?articleID=19400338>

Abstract: This article discusses the importance of Student Information Systems (SIS) and their role in school and district data management. The evolution of technology and increased data reporting demands from No Child Left Behind (NCLB) have made SIS essential to schools and districts to maintain critical student data. In order for schools and districts to determine their specific SIS needs, administrators must consider how well the SIS meets interoperability standards to work with other software systems, SIS architecture (client-server software or Web-based), communication options available with the SIS, and the level of ease to which the SIS can be customized to meet the specific needs of the school or district.

Teacher Evaluation: A Comprehensive Guide to New Directions and Practices

Author(s): Peterson, K. D. Date: 2000

Source: Thousand Oaks, CA: Corwin Press

Type: Information guide

Full text: URL not available

Abstract: This informational handbook, authored by Kenneth Peterson, seeks to propose a new perspective on teacher evaluation; namely, a system that is responsive to the needs and professional desires of practitioners in American public schools. Rather than focusing on the faults and shortcomings of teachers, Peterson argues that teacher-evaluation models can be designed and implemented such that teachers can learn about their own pedagogy and can be encouraged to reflect, grow, and hone their craft. The textbook is organized into five different sections: Thinking About Teacher Evaluation, Multiple Data Sources for Teacher Evaluation, Tools for Improved Teacher Evaluation, Evaluation of Other Educators, and School District Responsibilities and Activities. The components within these sections are presented as a model of systemic reform for teacher evaluation, and, according to Peterson, aim for the following objectives: emphasizing that good teaching does exist, using sound reasons to evaluate, focusing the evaluation model on teachers (and allowing them to be self-reflective), triangulating evaluation data to ensure validity and reliability, and limiting the role of administrator judgment.

Teacher-Friendly Options to Improve Teaching Through Student Data Analysis

Author(s): Wayman, J. C., & Stringfield, S. Date: 2003

Source: Paper presented at the 10th annual meeting of the American Association for Teaching and Curriculum, October 4, Baltimore

Type: Information guide

Full text: http://www.nclb4dccharters.com/documents/wayman_springfield_study.pdf

Abstract: Student data systems that preserve student information (e.g., student assessment scores, demographic information, grades, schedules) serve as a vital tool for educators to identify student learning needs. No Child Left Behind (NCLB) Act accountability policies necessitate that districts maintain student data, using it as a catalyst for educational improvements. When data systems do not allow for flexible analyses, effective data usage becomes difficult. This study examines three schools and their districts in their attempt to incorporate entire faculties in the process of using student data to improve classroom practice. The authors explore factors that contribute to widespread use of student data systems and the changes in teacher practice and attitudes that result from their use. Relying on data collected through focus groups and interviews with principals, teachers, and district administrators, qualitative analysis indicates that the following are all factors that facilitate the use of student data systems: principal and district involvement in promoting and providing opportunities for data usage, a nonthreatening triangulation of data, and provision of efficient data access. Further analysis indicates that teachers who utilize data systems increased their efficiency, generated better responses to student needs, and took part in reflection on their teaching practices. The authors conclude with a discussion of the implications and limitations of their research.

Technology-Supported Involvement of Entire Faculties in Examination of Student Data for Instructional Improvement

Author(s): Wayman, J., & Stringfield, S. Date: 2006

Source: *American Journal of Education*, 112(4), 549–571

Type: Scientific research

Full text: URL not available

Abstract: This study uses data from three different American schools to examine the strategies employed by administrators to get entire faculties more involved in data-driven decision making. The research team assesses the efficacy and efficiency of three types of data systems to make recommendations to other school officials. The results of the study show that examining student data in a methodical and thoughtful way can lead to improved pedagogy across an entire faculty. Regardless of the type of system, the study concludes, data-driven decision making can only become a schoolwide initiative at the hands of an involved and willing principal. And although the external validity of this study can be questioned due to the small sample size, the authors feel that the results are promising.

Technology Tools for the Analysis of Achievement Data: An Introductory Guide for Educational Leaders

Author(s): Sarmiento, J. W. Date: 2003

Source: Philadelphia: Advanced Technologies for Learning Lab and Laboratory for Student Success

Type: Information guide

Full text: http://www.nwrel.org/scpd/sslc/federal_grantees/cohort2/data_institutes/binder/resources/C2DataTechToolsforAnalysis.pdf

Abstract: This report discusses the use of data to support decision making in schools and districts and describes the factors that states and districts should consider in the selection of a data analysis tool. The author defines the key functional and technical considerations for data analysis tools and provides a template to assist states and districts in the selection process. The second half of the report provides a brief description of 17 data analysis software programs and applications.

Using Data: The Math's Not the Hard Part

Author(s): Jerald, C. D. Date: 2006

Source: Washington, DC: The Center for Comprehensive School Reform and Improvement

Type: Literature review

Full text: http://www.centerforcsri.org/files/Center_IB_Sept06B.pdf

Abstract: This issue paper, disseminated by The Center for Comprehensive School Reform and Improvement, provides an information guide on strategies for effective uses of data in school settings. After providing some introductory background on data systems and reforms within this arena, the author gives a series of tips on “seizing the data”; these tips include using data coaches, providing better training on data collection and systems, addressing fears and anxieties about data, demonstrating leadership, and giving sufficient time for the faculty to learn and practice. If these steps are taken appropriately, school officials will succeed in creating a “culture of inquiry” among students and educators alike.